AMSAT News Service Weekly Bulletins
Issue: ANS-338
Date: 2011-12-04
Sources: amsat-ans-2011-ans-338-weekly.txt

AMSAT NEWS SERVICE
ANS-338

ANS is a free, weekly, news and information service of AMSAT North America,
The
Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in
designing, building, launching and communicating through analog and digital
Amateur Radio satellites.

Please send any amateur satellite news or reports to:

ans-editor@amsat.org

In this edition:
* FASTRAC-1 Opened for Digipeating
* AO-51 Remembered
* Donations Needed to Keep AMSAT Project Fox Moving Forward
* ARISSat-1/KEDR Orbit Losing 1.5 KM Per Day
* U.S. Congress Proposes Easing of ITAR Restrictions
* SKN On OSCAR 2012 In Memory Of W1JSM
* This Week 50 Years Ago: OSCAR 1 Announcement for December 5, 1961
* AMSAT-DL Receives Mars Science Laboratory
* Explorer-1 [Prime] Renamed to Honor Former Director
* Satellite Shorts From All Over

SB SAT @ AMSAT $ANS-338.01
FASTRAC-1 Opened for Digipeating

AMSAT News Service Bulletin 338.01
  From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.01

The FASTRAC satellites have been in operation for more than a year and the team has been able to get a lot of data from them, in great part due to the amazing support from the amateur radio community.

Over the last month the team noticed that one of FASTRAC-1's on board microcontrollers which controls one of the experiments has not been booting up correctly. The team has done everything possible to correct this issue apart from turning it off which can only happen if the batteries fall below an specific charge level. Since the satellites have been power positive throughout this whole year the only way this can happen is if the satellites transmit more often. Given that one of FASTRAC goals has always been to eventually provide a platform for amateur radio enthusiasts to use after the primary mission was over, the team has decided to open up FASTRAC-1 to the amateur radio community with the hope as more people use it to digipeat through the satellite, the battery levels will diminish and cause a hard reset of the microcontrollers on board.

The satellite will be configured so that amateur radio operators can

use it beginning on Friday Dec 2 at 1600 UTC. Starting on this date people will be able to digipeat through the satellites. The call sign and frequencies of the satellite are summarized below and an example of digipeating through the satellite is also shown in below. To increase the chances of causing a hard reset, it is requested that as many amateur radio enthusiasts try to digipeat through the satellite on the weekend of Dec 10. If you are successful at digipeating through the satellites or have any problems doing so please let us know at fastracsats@gmail.com, through our Facebook page: (www.facebook.com/fastracsats) or through the forums on our website (http://fastrac.ae.utexas.edu/for_radio_operators/users/phpBB3/index.php) .

Frequency Information for FASTRAC-1

- FASTRAC-1 "Sara Lily" Downlink Frequency: 437.345 MHz
- FASTRAC-1 "Sara Lily" Uplink Frequency (1200 or 9600 baud): 145.825MHz
- FASTRAC-1 "Sara Lily" Satellite Call Sign: FAST1

*Example of Digipeating through FAST1 *

    - cmd: c CALLSIGN via fast1
    - cmd: KE5DTW>CALLSIGN,FAST1/1: <<C>>:
    - CALLSIGN>KE5DTW,FAST1*/1: <UA>:
    - *** CONNECTED to CALLSIGN VIA FAST1

Here the example shows KE5DTW (UT Austin Ground Station) digipeating through FAST1 to connect to CALLSIGN. CALLSIGN represents an arbitrary callsign and should be replaced with the callsign of the station with whom a connection is being attempted. The above example is based on a Kantronics KPC9612+ TNC.

For a PDF version of the announcement please go to the following link: http://fastrac.ae.utexas.edu/FASTRAC_Digipeating_Announcement.pdf

[ANS thanks Sebastin, KE5FKV, for the above information]

/EX

SB SAT @ AMSAT $ANS-338.02
AO-51 Remembered

AMSAT News Service Bulletin 338.02
  From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.02

Dozens of messages were posted to the amsat-bb after the news of AO-51's end of mission was received. Many remembered their contacts, several thanked the Operating Team. Many noted thatAO-51 was the satellite that brought them into this part of our hobby.

While too numerous to list them all a sample of the content seems appropriate ...

+ Robin Haighton, VE3FRH, who was AMSAT-NA President when AO-51 was designed and launched wrote, "I was very sorry to hear of the final loss of AO-51 (Echo) as it was the last satellite developed by AMSAT-NA and launched in 2004. As I recall much of the work was carried out by Mark Kanawati, Jim White WD0E, Chuck Green N0ADI (who accompanied the satellite to the Launch site) and Rick Hambly W2GPS. My thanks to all.

Photo galleries of the people and AO-51 can be found at:
http://www.amsat.org/amsat-new/echo/integration.php
http://bach.as.arizona.edu/gallery/main.php?g2_itemIdt51
http://www.amsat.org/amsat-new/echo/photos.php

+ Control Operator Mark Hammond, N8MH commented, "We essentially got 'a free, bonus overtime' from July 2010 until now. We thought it was about gone back then...check your logs and see just how many QSOs you made on AO-51 from the end of July 2010 until the end of November 2011 (and then check how many overall during the 7.5 years).

To which Patrick WD9EWK/VA7EWK replied, "I have logged a total of 10931 satellite QSOs. Of those, 4891 (44.7%) were on AO-51's different configurations. Since July 2010, I have logged 2233 satellite QSOs, with 574 of those (25.7%) on AO-51. My last AO-51 QSOs were logged on 13 November.

+ Pete, WB2OQQ wrote, "AO-51, has been one of my best satellite recruiting tools and I will certainly miss her, however she gave us many wonderful years of faithful service, good bye dear friend. It is important to note that the control team managed AO-51 in a manner that I believe extended her life, thank you. We all must continue to support AMSAT's Fox-1 project, and other AMSAT projects I believe thru Amateur Satellites we have found a potential path to excite the children today and continue the STEM initiative.

+ Bob, KC2WYH recalls, "I am a new ham, licensed less than two years, and worked John K8YSE via AO-51 with my little HT and an Arrow maybe six weeks after passing my Tech. A few months later after another test my first QSO signing "slash AG" was again on that bird, with Patrick WD9EWK. Just to "echo" what others have been saying: AO51, R.I.P. And a hearty thank-you to the Control Team for giving us so many many happy and proud hours!

+ Andreas, VK4HHH, AMSAT-VK Member said, "I think thanks are in order for the operations team who provided us with many years of enjoyment on countless AO-51 QSO's. Job well done from start to finish. RIP little satellite. May your solar panels always been shone on Look up and see what your grand-daddy, AO-07, has done and maybe you can draw the inspiration to come back to life in a decade or so.

+ Hector, CO6CBF wrote, "AO-51 has been like a work horse. It is the bird which got me into satellites. Thanks very much to the control team for the great work done.

+ Mani, VU2WMY from AMSAT-India and Secretary & Station-In-Charge of the Upagrah Amateur Radio Club VU2URC at India's ISRO Satellite Centre, Bangalore sent this message, "It is really a sad news. Bidding a farewell to AO-51 with a very heavy heart. Looking at the success, we all at Upagrah Amateur Radio Club VU2URC at ISRO Satellite Centre and AMSAT-India express our heartfelt and sincere thanks, appreciations and compliments to the entire AO-51 (ECHO) team. AO-51 was truly one of the best amateur radio satellites. It was a very favorite for many of our VU hams for its strong signals and ease of operations. 'Thank you AO-51 for your great and fruitful services to the World of Amateur Radio'. We take this opportunity to thank each & every one associated with this great project and wish AMSAT-NA all the success in their future endeavors.

[ANS thanks everyone for the above information]

/EX

SB SAT @ AMSAT $ANS-338.03
Donations Needed to Keep AMSAT Project Fox Moving Forward

AMSAT News Service Bulletin 338.03
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.03

"Given the sad news on AO-51," AMSAT President Barry Baines, WD4ASW, said, "we highlighted at the recent 2011 Symposium that AMSAT is actively developing Fox-1, a new spacecraft that is designed to replace AO-51. Fox-1 development now takes on a great sense of urgency."

AMSAT Vice-President of Engineering, Tony Monteiro, AA2TX says, "Fox-1 will advance single-channel FM repeater satellite operation beyond the experience of AO-51. It will advance AMSAT to the next generation of AO-51 class satellites."

Fox-1 is designed for longer operational life with these features:

+ Fox-1 is designed to operate in sunlight without batteries once the battery system fails. This applies lessons learned from AO-51 and ARISSat-1 operations.

+ In case of IHU failure Fox-1 will continue to operate its FM repeater in a basic, 'zombie sat' mode, so that the repeater remains on-the-air.

+ Fox-1 is designed as the immediate replacement for AO-51. Its U/V (Mode B) transponder will make it even easier to work with modest equipment.

+ From the ground user's perspective, the same FM amateur radio equipment used for AO-51 may be used for Fox-1.

+ Extending the design, Fox-2 will benefit from the development work of Fox-1 by adding more sophisticated power management and Software Defined Transponder (SDX) communications systems.

Barry concluded, "AMSAT's ability to provide a replacement spacecraft and get it launched is dependent upon the active support of donors who wish to see Fox-1 fly."

Several opportunities to make your donation include:

+ Call Martha at the AMSAT Office +1-888-FB AMSAT (1-888-322-6728)
+ Paypal donation widget on the main page at: http://www.amsat.org
+ Paypal donation widget for Project Fox at: http://www.amsat.org/amsat-new/fox/
+ The AMSAT Store: http://www.amsat-na.com/store/categories.php

The Powerpoint presentations from the 2011 AMSAT Space Symposium on the Project Fox web site provide a good overview of the technical progress: http://www.amsat.org/amsat-new/fox/

+ Fox-1 Project Overview
+ Fox-1 Mechanical Design
+ Fox-1 Thermal Design

+ Fox-1 Radiation Environment

[ANS thanks AMSAT President Barry Baines, WD4ASW, the AO-51 Operating Team and the Project Fox Engineering team for the above information]

/EX

SB SAT @ AMSAT $ANS-338.04
ARISSat-1/KEDR Orbit Losing 1.5 KM Per Day

AMSAT News Service Bulletin 338.04
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.04

The ARISSat-1/KEDR Operating Team reminds you that if you have been putting off working through the ARISSat-1 repeater, receiving SSTV pictures, or submitting telemetry, the next few weeks will be your last opportunity to be a part of this satellite's history.

Since deployment in August, ARISSat-1 has descended about 60 km,and is currently losing more than 1.5 km per day. The rapid rate is partially the result of the recent solar activity on the atmosphere, significantly increasing the drag.

The predictions by several individuals and groups are all converging toward a reentry in January or February, 2012. Heating will become significant before then. Remember, good telemetry in this period provides invaluable information to the engineering team, to be used in future projects.

The orbit period changes about 30 seconds per day, and that will increase steadily. Be certain to update your tracking program Keps from Space-Track or CelesTrak before each pass. They issue revised versions 3-5 times daily. As the descent continues, this will become even more critical to copying the telemetry beacon, especially unattended.

[ANS thanks the ARISSat-1/KEDR Operating Team for the above information]

/EX

SB SAT @ AMSAT $ANS-338.05
U.S. Congress Proposes Easing of ITAR Restrictions

AMSAT News Service Bulletin 338.05
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.05

In the United States the International Traffic in Arms Regulations (ITAR) law has threatened amateur radio satellite developers with jail terms and heavy fines if they collaborate with overseas amateur satellite projects on projects deemed to be "dual use". The dual use designation is applied to technology for which the Department of Defense and Department of State determines may have military applications even if it is developed for civilian research or application.

This ITAR dual use designation has made AMSAT-NA a "munitions supplier" as defined by the law. It almost completely eliminated AMSAT-NA cooperation and assistance with amateur radio satellite projects in

any other country than the USA.

A proposed change in the ITAR law by Congressional bill H.R. 3288 may help ease the Federal Government restrictions on US Hams engaging in collaborative projects with Radio Amateurs in rest of the world.

H.R. 3288: Safeguarding United States Satellite Leadership and Security Act of 2011 sponsored by Rep. Howard Berman is at the first step of the legislative process in Congresss. It proposes to reduce ITAR restrictions on commercial satellite development.

Additional information, including a link to the text of the bill, list of the co-sponsors, and a progress-tracking overview is at: http://www.govtrack.us/congress/bill.xpd?bill=h112-3288

The UniverseToday.com article 'Could We Soon See the End of ITAR's Chokehold on Space Exploration?' provides a good overview of this vital bill, read it at http://tinyurl.com/6r3nb4m

[ANS thanks UniverseToday.com and govtrack.us for the above information]

/EX

SB SAT @ AMSAT $ANS-338.06
SKN On OSCAR 2012 In Memory Of W1JSM

AMSAT News Service Bulletin 338.06
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.06

You are cordially invited to participate in Straight Key Night on OSCAR 2012, conducted by AMSAT for all radio amateurs throughout the world. This year's event is dedicated to the memory of Don Brown, W1JSM, who passed away in 2011, aged 90. Don was a longtime, enthusiastic VHF/UHF and satellite operator, and one of our most frequent Best Fist winners.

As always, SKN on OSCAR is simple and informal. Just operate CW through one or more satellites on 1 January 2012 (0000 to 2400 UTC), using a straight hand key.

There is no need to send in a log, but all participants are encouraged to nominate someone they worked for Best Fist. Your nominee need not have the best fist of anyone you heard, only of those you worked. Send your nomination to w2rs@amsat.org. A list of those nominated will appear in ANS in early February.

[ANS thanks Ray Soifer, W2RS for the above information]

/EX

SB SAT @ AMSAT $ANS-338.07
This Week 50 Years Ago: OSCAR 1 Announcement for December 5, 1961

AMSAT News Service Bulletin 338.07
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.07

The AMSAT News Service is re-running the Project OSCAR Newsletters to commemorate the 50th anniversary of OSCAR 1. During the November/ December 2011 time frame you will be able to share the excitement of the launch campaign that started it all 50 years ago.

The Newsletters were hand-typed back in 1961. Thanks to Don Ferguson, KD6IRE for scanning the original documents announcing OSCAR 1.

<Begin Commemorative Message>

O S C A R N E W S L E T T E R

December 5, 1961

Flash! Air Force to orbit Oscar I satellite! The U. S. Air Force has invited the Oscar satellite aboard a Discoverer vehicle which will be launched on a north-south polar orbit this month! The Oscar Association made this news release on November 15th. A Department of Defense News Release (November 15, 1961) conveys this information, and a letter from Dr. J. V. Charyk, Under Secretary of the Air Force to the American Radio Relay League proffers the formal invitation.

LAUNCH DATE IS VERY CLOSE AT HAND! Listen to the Voice of America News Broadcasts and the official ARRL broadcasts from WIAW. Watch your local newspaper. Launch flash will be carried by Associated Press and United Press news service to local radio and television stations! It is hoped that Oscar 1 will be launched before the Christmas Holidays!

Latest Oscar News:

In last minute preparation for an early launch, the second Oscar I package (serial #2) has been completed, tested and is now ready for launch if needed.

The transmitter, Keyer, Batteries, Turn-on mechanism, antenna, etc. were installed in the flight-version gold plated housing and the completed unit was checked out. All environmental tests were conducted including 50 G's of shock in all planes, 15 G's vibration, 250,000 feet of altitude, heat and cold, etc. All tests were passed with flying colors. Finally, the final thermal striping was applied and the complete package was turned over to the Discoverer project individual who will arrange for its official acceptance.

This new package will be flown by special messenger to Vandenburg AFB (north of Los Angeles) and will be installed on Discoverer XXXVI, replacing the Oscar I (Serial #1) package presently on the vehicle. Serial #1 unit will serve as the spare (standby) package.

Oscar I (Serial #3) is progressing under full steam. Chuck Smallhouse, WAGMGZ, states that this new, improved unit will deliver about 300 milliwatts of r.f. power for the same input power used in the earlier models. In addition, keying characteristics are improved, and the slight keying chirp of #1 and #2 is absent. Serial #3 has already operated for 4 hours at a temperature of 100°C with no ill effects. This unit should be available within a few weeks as a ready-to-launch package!

Last Minute Preparations

Sunday, December 3, 1961 (2000 GMT) saw a "dry run" of the Oscar 1 sideband communications network. The remote tracking stations at

various locations checked into the Oscar Communications Center (KBQEZ). Frequencies of 21.410 mc and 14.285 mc were used. WAABY and KANAA served as the east coast liaison point and two practice messages were successfully handled with remote tracking stations. Congratulations to all!

The Official Call of the Oscar 1 Satellite is W6EE. Because the transmitter is unattended, and also because of the extra circuitry required to send the call, a waiver has been obtained from the F.C.C., permitting the satellite to transmit without the use of the call. It is hoped that it will be possible to modify future packages to sign W6EE.

Tom Lott, VEZAGF/W6 (Director of Communications) asks that Orbital data and/or sighting reports for transmission to the Oscar Communi-cations Center should be radioed or phoned into the nearest traffic net (see November, 1961 QST for net director) or to your S.C.M. (see early pages of any QST). The message should be addressed to OSCAR, Box 183, Sunnyvale, California, U. S. A.

Remember! A written back-up message should also be sent via air-mail to the same address. (See September, 1961 QST, pages 18 and 46 for details.) Once again, may we stress that the launch date is very close at hand. You must be prepared now to monitor 145 mc. Notify your amateur friends and pass the word via your local radio club that OSCAR I will soon be launched. Once you hear of the actual launch, 24-hour a day monitoring of the frequency is requested un-til orbit parameters are established. Frequency of the beacon trans-mitter is close to 145 mc: actual frequency is dependent upon temp-erature of the satellite - and other factors, and will be announced as soon as it is determined. Keep watch over plus or minus 50 kilo-cycles of the center frequency of 145 mc. Notify the Oscar Associa-tion of frequency and time of passage as soon as you hear the "bird".

Remember! The USAF and the Oscar Association have now done all that can be done. The rest is up to YOU! This unique experiment can bring added prestige and glory to amateur radio, and strengthen the cause of our great hobby in a time when all available support is sorely needed. YOUR cooperation is urgently requested. Take part in this great adventure into outer space.

<End of Commemorative Message>

[ANS thanks Don Ferguson, KD6IRE and Project OSCAR for the above information]

/EX

SB SAT @ AMSAT $ANS-338.08
AMSAT-DL Receives Mars Science Laboratory

AMSAT News Service Bulletin 338.08
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.08

Radio Amateurs have received signals from the NASA Mars Science Laboratory using the AMSAT-DL amateur radio facility at Bochum in Germany.

Just over 7 hours after launch at 21:45 UTC the X-band telemetry signal from the MSL was received using the Bochum amateur radio

facility. The signal, received at a distance of 112,000 km, had a spin-modulation of +/- 3.5 Hz, 2 revolutions / minute.

This is believed to be the first reception of the MSL outside the official NASA Deep Space Network (DSN).

For reception of MSL James Miller, G3RUH remotely reconfigured the Bochum tracking and receiving system. The MSL X-Band telemetry signal was received automatically in Bochum, no-one had to be physically on-site. This shows how flexible and reliable the system at Bochum is, ready for the planned AMSAT-DL P5-A mission to Mars.

James says the Bochum Antenna is used to receive lots of the NASA spacecraft all the time. Stereo-A/B is heard every day, and when they have gone LOS, he checks Grail-A and Grail-B and also Juno.

Reception of MSL required adding its trajectory data to the spacecraft database, and the frequency to the radio control computer. Provided the given frequency is with +/- 40 kHz of the actual frequency, Bochum can lock onto it in 1 sec via an FFT acquisition process. As it happens, the actual frequency was within 8 kHz of the DSN channel center, so finding it was immediate.

Congratulations to the AMSAT-DL team on a remarkable achievement.

Control Software for the Bochum Radio Telescope by James Miller G3RUH: http://www.amsat.org/amsat/articles/g3ruh/126.html

Stereo A/B Spacecraft Telemetry Reception at Bochum by James Miller, G3RUH http://www.amsat.org/amsat/articles/g3ruh/127.html

AMSAT-DL in Google English http://tinyurl.com/AMSAT-DL

[ANS thanks James Miller, G3RUH, AMSAT-DL, and AMSAT-UK for the above information]

/EX

SB SAT @ AMSAT $ANS-338.09
Explorer-1 [Prime] Renamed to Honor Former Director

AMSAT News Service Bulletin 338.09
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.09

BOZEMAN - The Montana State University satellite that has been orbiting the Earth since Oct. 28 has been renamed to honor the late William Hiscock, who was director of the Montana Space Grant Consortium until his death in 2009.

Directors of the MSGC and MSU's Space Science and Engineering Lab announced Friday, Nov. 4, that the satellite originally called Explorer-1 [Prime] will now be called the William A. Hiscock Radiation Belt Explorer. The satellite that involved approximately 125 students over five years will be known more familiarly as The Hiscock Radiation Belt Explorer (HRBE).

Students, staff and faculty who attended the Nov. 4 dedication ceremony also learned that the satellite whose mission is to study the Van Allen Radiation Belts has already passed through an intense band of energetic electrons bombarding Earth's upper atmosphere over

Alaska. HRBE sent that information back to students who monitor the satellite from MSU's Space Operations Center. It is Montana's first satellite. It was designed, built and is now operated by MSU students.

The full press release can be viewed on-line at:
http://www.montana.edu/cpa/news/nwview.php?article493

[ANS thanks Montana State University and CQ VHF Magazine for the above information]

/EX

SB SAT @ AMSAT $ANS-338.10
Satellite Shorts From All Over

AMSAT News Service Bulletin 338.10
From AMSAT HQ SILVER SPRING, MD.
December 4, 2011
To All RADIO AMATEURS
BID: $ANS-338.10

+ A link to the annual President's Report from the 2011 AMSAT Symposium and General Meeting has been added to the front page news items at: http://www.amsat.org.

+ In addition to the ARRL interviews at the 2011 Symposium of AMSAT Officers and Lance Ginner from Project OSCAR another interesting interview with Carroll Swain, W7DU has been posted. Carroll is a long time AMSAT Member and is still going strong at 98.5 years young. He is a regular on the AMSAT 20 Meter Net and brings his wife with him to the annual AMSAT Space Symposium each year. Watch at: http://youtu.be/uY3cDl8aQZU (via Keith, W5IU)

+ Additional coverage of AMSAT-DL receiving MSL was published in The Register:
http://www.theregister.co.uk/2011/11/28/radio_hams_curiosity_signals/

+ Astronomers at the Sir Thomas Brisbane Planetarium in Australia made a time-lapse movie of the MSL as it departs Earth on its way to Mars: http://tinyurl.com/d64oezy (UniverseToday.com)

+ Video: Curiosity Rover Launches to Mars has been posted on the UniverseToday site at: http://tinyurl.com/7e48slu

+ To celebrate the 75th Anniversary of the CBC/Radio Canada, Canadian Amateurs may use the following prefixed between December 1-31, 2011:
VG for VA,
VX for VE,
XJ for VO,
XK for VY.

+ Bobby Lacey, KF4GTA posted photos from his opportunity to spend 3 hours inside of Atlantis on November 18:
http://www.dropbox.com/gallery/42374/1/kf4gta-atlantis?h7bde
He was also present for the shuttle's last launch and landing, STS-135. (via Southgate ARC)

[ANS thanks everyone for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the

President's
Club. Members of the President's Club, as sustaining donors to AMSAT
Project
Funds, will be eligible to receive additional benefits. Application
forms
are
available from the AMSAT Office.

73,
This week's ANS Editor,
Lee McLamb, KU4OS